

Module 2: Fire Safety

Lesson 7: Safe Fire Suppression

Self-Study Guide

Lesson Overview

Lesson Purpose	In a disaster setting, you may be confronted with fires. This lesson will present eight basic rules for safe fire suppression and explain how to operate a fire extinguisher. Remember, in all situations, safety is your number one priority.
Lesson Objectives	<p>After completing this lesson, you should be able to:</p> <ul style="list-style-type: none">▪ Identify safe practices for fire suppression.▪ Explain the P.A.S.S. procedure for extinguisher operation.
Estimated Time	20 minutes
Contents	<p>This lesson includes the following sections:</p> <ul style="list-style-type: none">▪ Lesson Overview▪ Safety Rules▪ Selecting the Proper Equipment▪ How to Operate a Fire Extinguisher▪ Lesson Summary

Fire Suppression Safety Rules

As a CERT member, following a disaster, you may be able to suppress small fires. When carrying out this role, your personal safety must be your primary concern.

There are eight basic rules for safe fire suppression. Following these guidelines will enable you to protect your own safety.

Rule 1: Use Safety Equipment

To protect your personal safety, it is important to use safety equipment at all times. Safety equipment includes:

- Gloves.
- Goggles.
- Dust mask.
- Helmet.
- Boots.

In a disaster, CERTs wear this personal safety equipment.

Rule 2: Don't Try To Fight a Fire Alone

In a disaster, there is safety in numbers, so be sure that you have help.

- **Work with a buddy.** Buddies serve an important purpose. They cover your back, look around for danger, and protect your safety.
- **Have a backup team whenever possible.** A backup team covering you and your buddy just makes good sense. They can support your fire suppression efforts and can provide help if you need it.

Your first priority is your personal safety. Don't put yourself at risk.

Rule 3: Check Before Entering

When entering an area:

- Feel closed doors with the back of the hand, working from the bottom of the door up. Do not touch the door handle before feeling the door.
- If the door is hot, there is fire behind it. **Do not enter!** Opening the door will feed additional oxygen to the fire. Trapped fuel vapors can ignite violently.

Do not enter smoke-filled areas. Fire suppression in smoke-filled areas requires breathing and protective equipment that CERTs don't have.

Rule 4: Plan Your Exit

Fires spread much faster than you might think.

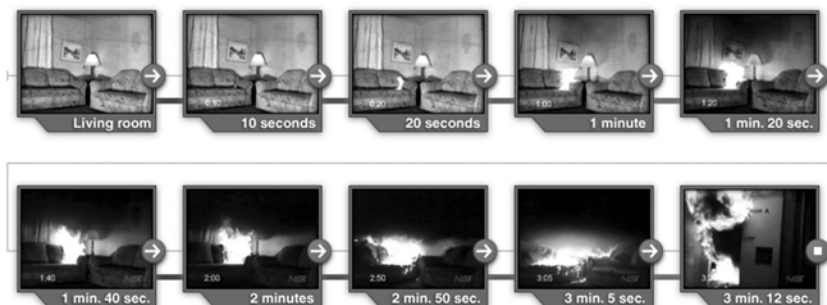
- **Always have two ways to exit the fire area.** A backup escape plan is necessary in case your main escape route becomes blocked.
- **Confine the fire,** whenever possible, by shutting doors as you leave.

The Spread of Fire

Fires can spread very quickly. The following illustration demonstrates how quickly a fire can spread from its ignition to flashover.

FLASHOVER FIRE

The following timeline illustrates the progression of a fire from incipient to flashover.



Graphic showing ten photos of the same room with varying times displayed after a fire has ignited. The steps below tell what happens at each particular time increment.

1. The fire has not ignited.
2. 10 seconds after ignition: A small flame is visible in the corner of the sofa.
3. 20 seconds after ignition: The flame is now approximately six inches tall but is limited to the corner of the sofa.
4. 1 minute after ignition: The flame has now involved the arm cushion and seat back. Smoke is visible above the flame.
5. 1 minute, 20 seconds after ignition: The seat, back cushion, and arm of the sofa are burning steadily. Smoke is beginning to gather at the top of the room.
6. 1 minute, 40 seconds after ignition. The fire is spreading to the curtains. Smoke has gathered well down from the ceiling and is becoming thicker.
7. 2 minutes after ignition: The curtains and a wall hanging are now involved. The smoke is very thick and hanging just above the level of the furniture.
8. 2 minutes, 50 seconds after ignition. The flame has now spread to an adjacent end table and lamp and is visible on the carpeting. The smoke is very thick but remains just above the level of the furniture.
9. 3 minutes, 5 seconds after ignition. The flame has now spread to an adjacent chair. Smoke nearly fills the room.
10. 3 minutes, 12 seconds after ignition: The fire has flashed over, filling the entire room with flames and smoke.

Rule 5: Maintain a Safe Distance and Position

- **Don't get too close.** If you attempt to put out a small fire, know the effective range of your fire extinguisher. Stay near the outer boundary of that range. If you feel the heat before discharging the extinguisher, you are too close. Move up on the fire as it gets smaller to the point of extinguishment.
- **Stay low to the ground.** Smoke will naturally rise. Keeping low to the ground will provide you with fresher air to breathe. Remember, if smoke is building in a room, leave the area and confine the fire, if possible.

Rule 6: Suppress Only Small Fires

For planning purposes, a small fire is about the size of a wastepaper can and can be extinguished with one fire extinguisher.

Learn the capability of your equipment. Do not try to suppress a fire that is too large for the equipment.

Rule 7: Use the Correct Equipment in the Correct Manner

In an earlier lesson, you learned about fire classifications and extinguisher ratings.

In a moment, we'll take a closer look at extinguisher ratings and the proper procedure for operating a portable fire extinguisher.

Rule 8: Overhaul the Fire

Overhauling is the process of locating any potential sources of reignition, such as hidden burning material, and extinguishing them. Always overhaul fires to make sure that the fire's really out before you move on!

Knowledge Review



Instructions: Select the correct answer. When you are finished, turn to the next page to check your answers.

1. If you are not wearing personal protective equipment when you discover a fire, you should:
 - ☐ Extinguish the fire from a safe distance.
 - ☐ Call for a backup team to help.
 - ☐ Make sure that you have two escape routes.
 - ☐ Leave the building.
2. If you encounter a smoke-filled room with a small fire, you should:
 - ☐ Check the door temperature before entering.
 - ☐ Enter the room and stay low.
 - ☐ Not enter the room and confine the fire by shutting the door, if possible.
 - ☐ Team with a buddy before you go in.
3. You should only suppress small fires that are about the size of a:
 - ☐ Wastepaper can.
 - ☐ Closet.
 - ☐ Small car.
 - ☐ Room.
4. The best distance for fighting a fire is:
 - ☐ As close as you can get without getting burned.
 - ☐ Near the limit of your extinguisher's effective range.
 - ☐ Approximately 30 feet.
 - ☐ From the nearest exit.

Knowledge Review: Answer Key



Instructions: Compare your answers to those shown below.

1. If you are not wearing personal protective equipment when you discover a fire, you should:

- ☐ Extinguish the fire from a safe distance.
- ☐ Call for a backup team to help.
- ☐ Make sure that you have two escape routes.
- ☒ **Leave the building.**

In a disaster setting, if you are not wearing personal protective equipment when you discover a fire, you should **leave the building**. Your personal safety should be your first priority.

2. If you encounter a smoke-filled room with a small fire, you should:

- ☐ Check the door temperature before entering.
- ☐ Enter the room and stay low.
- ☒ **Not enter the room and confine the fire by shutting the door, if possible.**
- ☐ Team with a buddy before you go in.

If you encounter a smoke-filled room with a small fire, you should not enter the room. Fire suppression in smoke-filled areas requires equipment that CERTs don't have. **Shut the door to help confine the fire.**

3. You should only suppress small fires that are about the size of a:

- ☒ **Wastepaper can.**
- ☐ Closet.
- ☐ Small car.
- ☐ Room.

You should only suppress small fires that are about the size of a **wastepaper can**. This size is about the capacity of one extinguisher.

4. The best distance for fighting a fire is:

- ☐ As close as you can get without getting burned.
- ☒ **Near the limit of your extinguisher's effective range.**
- ☐ Approximately 30 feet.
- ☐ From the nearest exit.

The best distance for fighting a fire is **near the limit of your extinguisher's effective range**. It's important to know the effective range of your equipment. If you can feel the heat, you're too close.

Selecting the Proper Equipment

Selecting the Proper Equipment

In equipping yourself to extinguish a fire, it is important to select an extinguisher that:

- Is rated for the class of the fire to be extinguished.
- Has the capacity for the size of the fire to be extinguished.
- Is of a size and weight that you can effectively hold and operate.

Extinguisher Ratings

As you know, portable fire extinguishers are rated according to their effectiveness on various classes of fire:

- Class A: Ordinary Combustibles
- Class B: Flammable and Combustible Liquids
- Class C: Electrical Equipment
- Class D: Combustible Metals

More on Extinguisher Ratings

Extinguishers are also rated for the size of the fire that they can handle. On labels for Class A and B extinguishers, the rating is expressed as a number. The larger the number, the larger the fire on which the extinguisher may be used.

The ratings vary among classes, as shown in the following table.

Class	Capacity Rating
Class A	Expressed in gallons, from 1 to 40 1 = 1¼ gallons, 2 = 2½ gallons, 3 = 3¾ gallons, etc.
Class B	Expressed in square feet of coverage, from 1 to 640
Class C	No numerical rating
Class D	No numerical rating; includes a list of the metals for which the extinguishing agent is effective

Knowledge Review



Instructions: Select the correct answer. Click ALL that apply. When you are finished, turn to the next page to check your answers.

1. You have a portable extinguisher labeled 2A:10B:C. What types and sizes of fire can you use it on?
 - ☐ Ordinary combustibles, 2½ gallon capacity
 - ☐ Burning titanium, 2 liters
 - ☐ Flammable and combustible liquids, 10 square feet
 - ☐ Electrical fire
 - ☐ Wood, 10 gallon capacity

Knowledge Review: Answer Key



Instructions: Compare your answer to those shown below.

1. You have a portable extinguisher labeled 2A:10B:C. What types and sizes of fire can you use it on?

- ☒ **Ordinary combustibles, 2½ gallon capacity**
- ☐ Burning titanium, 2 liters
- ☒ **Flammable and combustible liquids, 10 square feet**
- ☒ **Electrical fire**
- ☐ Wood, 10 gallon capacity

2A:10B:C tells us that the extinguisher can be used as follows:

- 2A: Ordinary combustibles (Class A), 2½ gallon capacity
- 10B: Flammable and combustible liquids (Class B), 10 square feet
- C: Electrical fire

The extinguisher is not rated for burning titanium (Class D). Although burning wood is a Class A fire, in the case provided in the question, the fire is too large for the rated extinguisher capacity.

How To Operate a Portable Fire Extinguisher

The procedure for operating a portable fire extinguisher is fairly simple.

A portable fire extinguisher has four main components: A hose or nozzle, a carrying handle and trigger, a pressure gauge, and the cylinder.

To operate a fire extinguisher, we use a simple procedure called **"P.A.S.S.": Pull, Aim, Squeeze, and Sweep.**

- First, **pull** the safety pin located in the handle (twist to break the seal).
- Next, test the extinguisher to ensure that it works, and **aim** the hose or nozzle at the base of the fire.
- Third, **squeeze** the trigger.
- Finally, **sweep** the base of the fire from side to side. Be sure to hold the extinguisher in an upright position as you sweep.

That's all there is to it—pull, aim, squeeze, and sweep.

Knowledge Review



Instructions: Put the steps for operating an extinguisher in the correct order. When you are finished, turn to the next page to check your answers.

1.

- ☐ Squeeze the trigger as you approach the fire.
- ☐ Test the extinguisher before approaching the fire and aim the hose or nozzle at the base of the fire.
- ☐ Pull the pin.
- ☐ Sweep the base of the fire.

Instructions: Select the correct answer. When you are finished, turn to the next page to check your answers.

2. After suppressing a small fire, you should first:

- ☐ Open all doors to let in fresh air.
- ☐ Exit as quickly as possible.
- ☐ Overhaul the fire.
- ☐ Empty the extinguisher canister.

Knowledge Review: Answer Key



Instructions: Compare your answer those shown below.

1.
 - ☐ 3 Squeeze the trigger as you approach the fire.
 - ☐ 2 Test the extinguisher before approaching the fire and aim the hose or nozzle at the base of the fire.
 - ☐ 1 Pull the pin.
 - ☐ 4 Sweep the base of the fire.

The correct sequence for operating a fire extinguisher is P.A.S.S.:

- Pull the pin.
- Test the extinguisher before approaching the fire and aim the hose or nozzle at the base of the fire.
- Squeeze the trigger as you approach the fire.
- Sweep the base of the fire.

Instructions: Compare your answer to the one shown below.

2. After suppressing a small fire, you should first:
 - ☐ Open all doors to let in fresh air.
 - ☐ Exit as quickly as possible.
 - ☒ **Overhaul the fire.**
 - ☐ Empty the extinguisher canister.

After suppressing a small fire, you should **overhaul the fire** to extinguish potential sources of reignition.

Lesson Summary

Lesson Summary

To protect your safety when suppressing fires:

- Wear protective equipment.
- Work with a buddy and as a team.
- Plan for safe entry and exit.
- Maintain a safe distance and position.
- Suppress only small fires using the proper equipment.
- Use the P.A.S.S. procedure to operate extinguishers.

Next Lesson

You have completed this lesson. You are now ready to begin Lesson 8: Introduction to Special Situations.